

Amendments to the Claims

5 Claim 1. (Currently Amended) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system comprising a plurality of modules having a plurality of receiver antennas for substantially simultaneously receiving a plurality of signals via a single frequency band, the method comprising:

amplifying the plurality of received signals with at least an amplifier;

generating a plurality of time domain samples of the amplified signals with at least an analog-to-digital converter (ADC) connected to the amplifier;

10 determining at least a candidate power according to root-mean-square (RMS) powers of a ~~first~~ group of symbols received at the receiver antennas with a processor connected to the ADC; and

setting the gain of the amplifier according to a selected candidate power with the processor;

15 wherein the received RMS power for one antenna is determined as the square root of the averaged product of each received symbol and its complex conjugate for all symbols of the group.

20 Claim 2. (Canceled)

Claim 3. (Currently Amended) The method of claim 1 wherein the candidate power is an RMS value of the RMS powers for each antenna determined for a ~~second~~ first group of antennas.

25 Claim 4. (Currently Amended) The method of claim 3 wherein the ~~second~~ first group is all receiver antennas.

Claim 5. (Currently Amended) The method of claim 3 wherein the ~~second~~ first group is receiver antennas having RMS powers larger than a first threshold.

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Claim 6. (Currently Amended) The method of claim 3 wherein the ~~second~~ first group

is receiver antennas having RMS powers smaller than a second threshold.

5 Claim 7. (Currently Amended) The method of claim 3 wherein the ~~second~~ first group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

10 Claim 8. (Currently Amended) The method of claim ~~[[2]]~~ 1 wherein the candidate power is an arithmetical mean of the RMS powers for each antenna determined for a second group of antennas.

Claim 9. (Original) The method of claim 8 wherein the second group is all receiver antennas.

15 Claim 10. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers larger than a first threshold.

Claim 11. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

20 Claim 12. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

25 Claim 13. (Currently Amended) The method of claim ~~[[2]]~~ 1 wherein the candidate power is a geometric mean of the RMS powers for each antenna determined for a ~~second~~ third group of antennas.

30 Claim 14. (Currently Amended) The method of claim 13 wherein the ~~second~~ third group is all receiver antennas.

Claim 15. (Currently Amended) The method of claim 13 wherein the ~~second~~ third group is receiver antennas having RMS powers larger than a first threshold.

- Claim 16. (Currently Amended) The method of claim 13 wherein the ~~second~~ third group is receiver antennas having RMS powers smaller than a second threshold.
- 5 Claim 17. (Currently Amended) The method of claim 13 wherein the ~~second~~ third group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.
- Claim 18. (Original) The method of claim 1 wherein the set gain is a target power  
10 divided by the candidate power.
- Claim 19. (Original) The method of claim 1 wherein the symbols are IEEE 802.11a or 802.11g short preamble symbols of the received signals.
- 15 Claim 20. (Currently Amended) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system, the method comprising:  
receiving a first signal by a first antenna;  
receiving a second signal by a second antenna;  
amplifying the received first signal to generate a first amplified signal with a first  
20 amplifier;  
amplifying the received second signal to generate a second amplified signal with a second amplifier;  
generating a first plurality of time domain samples of the first amplified signals;  
generating a second plurality of time domain samples of the second amplified  
25 signals;  
determining a first candidate power according a first group of symbols received at the first antenna;  
determining a second candidate power according to a second group of symbols received at the second antenna;  
30 selecting one selected candidate power out of the first candidate power and the second candidate power according to a predetermined rule; and  
setting a gain of the first and second amplifiers according to ~~[[a]]~~ the selected

candidate power;

- wherein the first and second candidate powers are determined according to root-mean-square (RMS) powers of the first and second group of symbols respectively, and each RMS power is determined as the square root of the averaged product of each
- 5 received symbol and its complex conjugate for all symbols of each group.

Claim 21. (Canceled)

- Claim 22. (New) The method of claim 20 wherein the each candidate power is an
- 10 RMS value of the RMS powers for the first and the second antennas.

Claim 23. (New) The method of claim 20 wherein the candidate power is an arithmetical mean of the RMS powers for the first and the second antennas.

- 15 Claim 24. (New) The method of claim 20 wherein the candidate power is a geometric mean of the RMS powers for the first and the second antennas.

Claim 25. (New) The method of claim 20 wherein the set gain is a target power divided by the candidate power.

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Claim 26. (New) The method of claim 20 wherein the symbols are IEEE 802.11a or 802.11g short preamble symbols of the received signals.

Claim 27. (New) The method of claim 20 further comprising:

- 25 receiving a third signal by a third antenna;  
amplifying the received third signal to generate a third amplified signal with a third amplifier;  
generating a third plurality of time domain samples of the third amplified signals;  
determining a third candidate power according a third group of symbols received
- 30 at the third antenna;  
selecting one selected candidate power out of the first candidate power, the second candidate power, and the third candidate power according to the predetermined rule;

and

setting the gain of the first, the second, and the third amplifiers according to the selected candidate power.

- 5      Claim 28. (New) The method of claim 27, wherein the first, the second, and the third candidate powers are determined according to root-mean-square (RMS) powers of the first, the second, and the third group of symbols respectively, and the each RMS power is determined as the square root of the averaged product of each received symbol and its complex conjugate for all symbols of the each group.

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